



A REVIEW ON EFFECT OF YOGA ON OBESITY

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<https://doi.org/10.46607/iamj1708122020>

(Published online: December 2020)

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Article Received: 06/11/2020 - Peer Reviewed: 14/11/2020 - Accepted for Publication: 18/11/2020



ABSTRACT

Obesity is a health disorder and increasing all over the world. Human beings are under threat from many chronic diseases and lifestyle disorders. A major cause of all these diseases was found to be improper lifestyle and stress leading to obesity and excessive lipid per oxidation indicating increased production of reactive oxygen species. It is also a cause for many non-communicable diseases. *Yoga* practice reduces the stress level which may improve the eating habits and help in weight reduction. Obesity is a growing public health concern in modern societies. Physical inactivity and unhealthy diet have been identified as major risk factors for obesity. ^[1] The role of obesity as a risk factor for a large number of chronic health complication, such as cardiovascular disease, hypertension, type 2 diabetes, stroke, sleep apnoea and certain type of cancer, as well as in mood change and depression in obese individual. The effect of *Pranayama* and certain *Yogicasanas* on parameters of obesity viz. weight reduction (BMI and waist hip ratio).

Keywords: Obesity, BMI (Body Mass Index), WHR (Waist Hip Ratio), *Yoga*

INTRODUCTION

Obesity is a condition of excessive fat accumulation and is a major risk factor for a number of chronic diseases. It is a health disorder and is growing in high

income countries, as well as in low - and middle-income countries. ^[2] This health problem is increasing in cities like Mumbai in India and the causes are ur-

banization and lifestyle changes, among other factors. ^[3]Yoga is based on one of six systems of Indian philosophy. Patanjali, the father of Ayurvedic medicine, formalized this discipline. The word Yoga originates from the Sanskrit for union and aims to harmonize mind, body and spirit. Traditional Yoga incorporates the eight limbs: *Yamas* and *Niyamas* (moral and ethical restraints), *Asanas* (postures), *Pranayama* (regulation of breathing), *Pratyahara* (internalization of the senses), *Dharana* (concentration), *Dhyana* (meditation), and *Samadhi* (self-realization). The universal need and importance of daily Yoga and *Pranayama* systematically planned and known as *Yoga* and *Pranayama* cannot be ignored at least in the present modern high-tech artificial world. ^[4] BMI (Body Mass Index) is considered as a measure of obesity. It was observed that for Asian Indians, BMI cut-off points are to be considered much lesser than the WHO standards for categorizing the obesity. ^[5] In our study, subjects with BMI of 25kg/m² or above were considered as obese. ^[6] In general, obesity is caused by an imbalance in the energy expenditure. ^[7] The present options for controlling obesity are inadequate and have adverse effects. Yoga is an ancient therapeutic practice based on *Patanjaliyogasutras*. The Integrated Approach of Yoga Therapy (IAYT) consists of *Yogic* practices based on ancient *yoga* texts and addresses the mind and body in a holistic way. The *Yoga* practice is useful

for stressful reduction, awareness on satiety, awareness on overeating and weight reduction. *Yogic* diet, *Asanas*, *Pranayamas*, *Dhyana*, *Kriya* and relaxation are an important aspect of lifestyle modification. A balanced equilibrium between the sympathetic and parasympathetic wings of the autonomic nervous system leads to a dynamic state of health. ^[8] The physiological and biochemical effects of *Yoga* training that have been previously reported include the inhibition of body weight gain, reduction in cholesterol levels and blood pressure along with improvement in immune function as well as beneficial psychological effects. ^[9] *Yoga* can also be used as a moderate intensity exercise for patients with limited aerobic capacity or restricted ability to exercise. *Yoga* has been shown to decrease hypertension and cardiac inflammation, stabilize the sympathetic nervous system and improve cardiac function. ^[10] *Yoga* therapy was found to bring about correction of body weight, reduction of abdominal girth, improvement in functions of pancreas. ^[11]

Aim and Objective

1. To study the effect of *Pranayama* and certain *Yogicasanas* on parameters of obesity viz weight reduction (reduction of BMI) and waist hip ratio.

Materials and Methods

A prospective was conducted on overweight (BMI>=25-29.9) and obese (BMI>=30) between the age group of 18-22 years.

Table 1: Overweight & obesity classification according to body mass index(BMI)

Classification	Body Mass Index (BMI) (Kg/M ²)
Overweight	≥ 25
Pre-obese	25-29.9
Obese	≥ 30
Obese class 1	30-34.9
Obese class 2	35-39.9
Obese class 3	≥ 40

Yoga

The *Yoga* intervention consisted of –

- A universal prayer (3min)
- *Yoga* postures (asanas, 42 min)
- Voluntarily regulated breathing techniques (*Pranayama*, 24min)

- Guided relaxation with meditation (6min)

Diet Plan

Participants of both groups were given a diet plan for a balanced diet of 1900-2000 Kcal/day. The diet plan included fruits, vegetables, lentils, complex carbohydrates and dairy products. Hence it was a lacto-

vegetarian diet. The ratio of carbohydrates, protein and fats in the diet was based on the guidelines for a balanced diet for an Indian population published by the National Institute of Nutrition, India, which states that a balanced Indian diet should have 10-15% of total calories from proteins, 20-30% of calories from fats and 50-60% of calories from carbohydrates. The total energy and nutritive values of the foods were determined from a database of Indian foods.^[12]

DISCUSSION

The present study confirmed the positive effects of *Yoga* therapy as a conventional modality of treatment on biochemical imbalances and oxidative status in obese subjects. Body Mass Index provides a simple numeric measure of a person's "fatness" or "thinness", allowing health professionals to discuss over and under – weight problems more objectively with their patients. Excessive body weight is associated with various diseases, particularly cardiovascular diseases, Type-2 Diabetes mellitus, Obstructive sleep apnoea, certain types of cancer and osteoarthritis.^[13]As a result, obesity has been found to reduce life expectancy.^[14]Obesity is most commonly caused by a combination of excessive food intake, lack of physical activity and genetic susceptibility, although a few cases are caused primarily by genes, endocrine disorders, medications or psychiatric illness. Obesity is one of the leading preventable causes of death worldwide.^[15]According to *Yoga*, increased body mass is the indication of imbalance in the *Triguna* and *Tridosha*. The root causes of the abnormalities are mental stress. To overcome the stress the person habituates overeating leading to the deposition of fat in the body. To manage overweight or obesity, one has to reduce the mental stress and has to provide the sufficient physical activities. The practice of *Yoga* can regulate all the body functions in a balanced manner and helpful in providing sustainable health. Analysis of our results clearly indicated that the complications of obesity can be reduced by *Yoga* therapy. The reduction in the body weight might be due to reduction in the deposited on adipose tissue. Eating disorder symptoms have also decreased following *Yoga*^[16], and in

those diagnosed with an eating disorder, physical activity increased following *yoga* and symptoms decreased, as did BMI and hip and waist measurements.^[17]A significant reductions in all body weight measures such as decrease in Body Mass Index, Waist hip ratio, Waist line, Hip line and in physiological measures such as Systolic blood pressure, Diastolic blood pressure Pulse rate all of which was statistically significant. Decreased blood pressure can be attributed to yogic relaxation, meditation and *Pranayama* which reduce the sympathetic action. During meditation the respiration becomes slow and shallow.^[18]Sympathetic over activity can be decreased by *Yogic* relaxation.^[19]

Unhealthy Lifestyle

- Eating a lot of food containing excessive fat
- Eating larger portion of food than requirement as per our body composition
- Intake of sugary drink
- Excessive Consumption of simple carbohydrates like pasta, brown rice, grains, vegetables and raw fruits
- Consumption of alcohol
- Too little sleep
- Lack of physical activity i.e. walking, regular exercises and *Yoga*.
- People taking small meals five or six time daily with low quantity of food have less cholesterol rather than taking heavy meals two or three times daily

Socio Economic and Environmental Factors

- Food availability (especially, junk food) at the place of work affects a lot
- Family and friend's lifestyle affect daily routine of eating
- In today's modernized world all are imitating each other and consume packet food.
- Poverty may cause people to buy high calorie food rather healthier food

Yoga and *Pranayama*: Beneficial For Weight Loss

Effects of *yoga* practice in the management of obesity and risk factors associated with reduction of fat from Buttocks, Hips, Abdomen and Waist should be given priorities because these are prominent areas where fat depot.

Studies given below suggest that *Yoga* training is better for good posture. Obese persons may need an instructor for fat reduction because of less flexibility. Many people may not obese but have depot fat on some prominent areas of body i.e. belly, buttocks, hips and waist and they can specific asana like *Hamsasana* for swan pose, *Mayurasana* for peacock pose, *Agnisar Asana* is beneficial for abdominal weight reduction.^[20]

- **Bhujangasana:** Beneficial for backache, slipped disk and toning of ovaries and uterus. It is useful in abdominal fat reduction.
- **Naukasana:** Helps in reducing waist fat and tone kidney
- **Dhanurasana:** Effective for fat loss as it improves kidney, pancreas, liver and intestinal functioning.
- **Trikonasana:** Helps in reducing side waist fat
- **Tadasana:** Helps in increasing height and beneficial for spine and whole-body massage and fat loss.
- **Ustrasana:** Beneficial for improving flexibility of spinal cord and beneficial for Asthma as well
- **Surya Namaskar:** It alone can improve flexibility, strength of muscles, balance, fat reduction and helpful for depressed patients.
- **Kapalbhati Pranayama:** Beneficial *Yoga* pose to cure stomach diseases i.e. constipation, acidity, diabetes & asthma. It is superb *Yoga* pose to increase metabolism which reduces risk of Obesity.
- **Parshwa Konasana (Side Angled Posture):** Beneficial for reducing fat from hip and thigh.
- **Marjariasana:** Helpful in curing menstrual cycle related problems and reproductive disorders. Lack of regular menstruation is one of the reasons of Obesity.
- **Halasana:** Useful in treating diabetes, constipation as it provides massage to kidney, liver and pancreas.

CONCLUSION

The terms obesity in *yoga*, we refer not only to the physical body, but to all the aspects of our being and the way in which we nourish and mobilize them. For this reason, it is said that in order to maintain normal

body weight, it is not enough to treat the body by special diets, technique, changes in lifestyle. It is also necessary to work on the level of consciousness, which is the mental energy, or a scientific system for developing our body and for the expression of consciousness. Therefore, in *Yoga* therapy, we do not exercise the body for the sake of burning extra calories, but to develop body awareness, to understand the language of our body, the way it works, and what suits it best the needs of our body and mind. In concept of *Yoga* the body is only the instrument, not the end. This may be helpful in preventing future development of insulin resistance & Type 2 Diabetes mellitus in healthy overweight & obese individuals.

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Source of Support: Nil

Conflict of Interest: None Declared

How to cite this URL: Varsha et al: A Review on Effect of Yoga on Obesity. International Ayurvedic Medical Journal {online} 2020 {cited December, 2020} Available from: http://www.iamj.in/posts/images/upload/5310_5314.pdf